

Listing of Claims:

1. (Original) A method of endoprosthetic discectomy surgery comprising the steps of receiving information about the size, shape and nature of a patient's damaged natural spinal vertebral bodies and discs from radiographs, CT and/or MRI scans or other imaging devices specifically determining the anterior-posterior and lateral dimensions of each involved vertebral body, the vertical height of the anterior aspect of each involved vertebral and/or proximate vertebral body, and the vertical height of the mid-portion of the involved and proximate normal intervertebral disc spaces, thereafter constructing one or more prosthetic vertebral body units and prosthetic disc units in conformity with the received information, each prosthetic disc unit including confronting L-shaped concaval-convex elements and a resilient body interposed between the concaval-convex elements; and an endoprosthetic vertebral body interposed between and engaging the adjacent disc units; and thereafter implanting the completed and conformed construction in the patient's spine.

2. (Original) A method according to claim 1 including the step of constructing a plurality of prosthetic disc units and further including the step of attaching the disc units to an endoprosthetic vertebral body prior to the step of supplying the assembly to the surgeon.

3. (Original) A method according to claim 1 further including the steps of surgically milling spinal bone surfaces with concave surfaces to receive confronting convex surfaces of the concaval-convex elements, and installing at least one disc unit having concaval-convex elements with said convex surfaces in the patient's spine.

4. (Cancelled) [A method of surgery comprising the steps of removing a vertebral

disc from a patient's spine, forming holes at precisely predetermined locations in bone structure adjacent the location of the removed disc, tapping the holes to form a female thread in each hole, and threadably implanting an anchor into each tapped hole, thereby creating reference points located precisely with respect to the patient's spine, forming concave surfaces in adjacent spinal bone, and inserting between the formed bone surfaces a vertebral disc endoprosthesis including confronting concaval-convex supports, each support having an exterior convex surface adapted to mate with the adjacent formed concave spinal bone surface, the endoprosthesis further including a resilient body element interposed between the concaval-convex supports, and thereafter affixing the concaval-convex supports to the adjacent bone.]

5. (Cancelled) [A method of surgery according to claim 4 further including the step of temporarily locating a bone surface milling jig at the site of the removed vertebral disc by means of said anchors prior to implanting said disc endoprosthesis.]

6. (Cancelled) [A method of surgery according to claim 4 further including the steps of attaching a screw to each concaval-convex support and screwing said screw into the implanted anchor.]

7. (Cancelled) [A method of surgery according to claim 4 further comprising the steps of identifying a damaged resilient nucleus body element or annular gasket in an implanted endoprosthesis, removing said damaged nucleus body element or annular gasket from the endoprosthesis and inserting a new, undamaged nucleus body element or annular gasket into the endoprosthesis without removing the concaval-convex supports from the patient's spine.]

8. (Cancelled) [A method of spinal surgery comprising the steps of forming mounting holes in one or more vertebral bodies of a patient's spine; utilizing said mounting holes to mount a bone mill on a patient's spine; milling confronting bone surfaces on and in the patient's spine to a predetermined surface shape; removing said mill; and thereafter mounting a vertebral disc endoprosthesis having a predetermined outer surface shape by means of the original mounting holes so that outer surfaces of the vertebral disc endoprosthesis mate precisely with the previously milled bone surfaces.]

9. (Cancelled) [A method of endoprosthetic discectomy surgery comprising the steps of receiving information about the size, shape and nature of a patient's involved and proximate normal natural spinal vertebral bodies and natural spinal vertebral discs from known imaging devices, thereafter constructing at least one vertebral disc endoprosthesis comprising a resilient disc body and concaval-convex elements at least partly surrounding the resilient disc body, removing at least the involved, natural spinal discs from the patient's spine, forming concave surfaces in adjacent spinal bone, and thereafter implanting the vertebral disc endoprosthesis in the patient's spine.]

10-11. (Cancelled)

12. (Previously Presented) A method of surgery comprising:
implanting at least one anchor into a hole having a predetermined position in an anterior
surface of at least one vertebral body;
affixing a bone surface milling mechanism to the at least one anchor;
forming partially hemispherical surfaces in endplates of confronting vertebral bodies
using the bone surface milling mechanism;

inserting between the formed partially hemispherical surfaces an intervertebral disc endoprosthesis, comprising:

confronting concaval-convex supports, each support having an exterior convex surface adapted to mate with one of the formed partially hemispherical surfaces, and

a resilient body interposed between the concaval-convex supports such that the supports are capable of movement relative to the resilient body element after the endoprosthesis has been inserted between the formed partially hemispherical surfaces.

13. (Cancelled)

14. (Previously Presented) The method of surgery according to claim 12, further comprising:

removing the bone surface milling mechanism after forming the partially hemispherical surfaces in the endplates of the vertebral bodies.

15-35. (Cancelled)

36. (Previously Presented) A method of surgery comprising:

forming concave surfaces in endplates of confronting vertebral bodies; and

inserting between the formed concave surfaces an intervertebral disc endoprosthesis wherein the intervertebral disc endoprosthesis comprises:

L-shaped supports wherein each of the L-shaped support comprises an exterior convex surface adapted to mate with one of the formed concave surfaces; and

a resilient body interposed between the L-shaped supports.

37. (Previously Presented) The method of claim 36, further comprising affixing the L-shaped supports to the confronting vertebral bodies.

38. (Previously Presented) The method of claim 36, further comprising implanting at least one anchor in at least one of the confronting vertebral bodies.

39. (Previously Presented) The method of claim 38, wherein the implanting is located in an anterior surface of the at least one of the confronting vertebral bodies.

40. (Previously Presented) The method of claim 39, further comprising affixing a bone surface milling mechanism to the at least one anchor.

41. (Previously Presented) The method of claim 36, wherein the resilient body comprises a relative stiff portion and a relative supple portion.

42. (Previously Presented) A method of endoprosthesis surgery comprising: receiving information about a size, shape, and nature of a patient's involved natural spinal vertebral bodies and natural spinal vertebral discs from an imaging device;

removing at least the involved and damaged natural spinal disc material from the patient's spine;

implanting at least one anchor into a hole having a predetermined position in an anterior surface of at least one adjacent vertebral body;

forming concave surfaces in the adjacent vertebral bodies; and

implanting into the patient's spine, an intervertebral disc endoprosthesis comprising a resilient disc body and concaval-convex elements that at least partly surround and are capable of movement relative to the resilient disc body in the patient's spine.

43. (Previously Presented) The method of claim 42, further comprising affixing a bone surface milling mechanism to the at least one anchor.

44. (Previously Presented) The method of claim 42 wherein the concaval-convex elements are adjacent to the resilient body.

45. (Previously Presented) The method of claim 42 wherein the concaval-convex elements are in contact with the resilient body.